ABSTRACT
               Summaries of the seven chapters and 12 proposals
contained in the final report are presented in the document. Chapter
1: Introduction, discusses the roles assigned by society to schools
and the workplace; Chapter 2:—A Framework for Studying the
Education-To-Work Transition, explores the subject area and how it
has been handled; Chapter 3: Survey of Current Linkages, presents
procedures and results of a four-State survey; Chapter 4: Survey
Analysis and Interpretation, and Chapter 5: Alternative Linkage
Approaches, combine to analyze survey findings and provide analytic
structure for linkage development; Chapter 6: Barriers and Proposals,
lists and discusses 12 proposals and four categories of barriers;
Chapter 7: Recommendations for Further Research and Development for
the National Institute of Education, discusses recommendations.
(LH)

■ A Summary of
Final Report of the State-Level Study
in Career Education

Bridging the Gap: A Study of Education-to-Work Linkages

Richard I. Ferrin, Project Director
Solomon Arbeiter, Project Codirector

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BRIDGING THE GAP: A STUDY OF

EDUCATION-TO-WORK LINKAGES

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Study in Career Education

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June 18, 1975

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Jersey 08540. Copies of the Final Report, Bridging the Gap: A Study
of Education-To-Work Linkages are available at $4 per copy. Copies
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To-Work Linkages are available at $2.75 per copy.

The College Entrance Examination Board is a nonprofit membership
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SUMMARY

FOCUS OF THE REPORT   This report focuses on the education-to-work transi-
                       tion, the barriers that make that transition so dif-
                       ficult for many individuals, and the range of mech-
                       anisms that are or might be in place to link the
                       worlds of education and work and thereby smooth the
                       transition for individuals moving from one to the
                       other.

                       This report is the result of a year-long study
                       conducted by the College Entrance Examination Board
                       for the National Institute of Education. The pur-
                       pose of the study was to develop a framework for
                       studying the education-to-work transition, to docu-
                       ment the variety of existing linkages, and to offer
                       proposals for improved or new mechanisms. Through-
                       out the project we have taken the position that it
                       would be inappropriate to create linkages that were
                       so tight between the two worlds that implementation
                       would yield a modern-day guild system. Rather we
                       have been guided by the principle that linkages
                       should bring the two worlds into alignment without
                       sacrificing the essential functions of either. A
                       theme running through the report is that education
                       and work are and should be distinct.

CHAPTER 1: INTRODUC- In the introduction to the report we note that society
          TION   assigns quite different roles to schools and colleges
                       from those assigned to the workplace. The main func-
                       tion of an educational institution is to produce an
                       individual able to perform well in the multiple
                       career areas within our society, e.g., as a parent,
                       as a wage-earner, as a citizen. A school's primary
                       product is an individual, and its operations and
                       resources are focused on individual development.

                       The product of the workplace, on the other hand,
                       is a societal benefit--material or service. The
                       worker is merely one of the components that function
                       in concert with other individuals, capital, equip-
                       ment, and materials to turn out a product. An in-
                       dustry's operations and resources are primarily
                       focused on corporate development. The introduction
                       also discusses the project design, with reference
                       to our two advisory consortiums and our four-state
                       survey. Throughout the project there was extensive
                       involvement by practitioners. The survey data were
                       a direct result of on-site interviews, and the pro-
                       posals set forth in Chapter 6 are a product of
                       deliberations with educational, industry, and labor
                       professionals.

**CHAPTER 2: A FRAME-
WORK FOR STUDYING
THE EDUCATION-TO-
WORK TRANSITION**

In Chapter 2 we mapped the possible terrain for study and then outlined the several decisions that were made to delimit the current investigation. Starting from a broad mandate to investigate career education linkages, the project was first limited in terms of career areas to be studied. Defining career area as "an aspect of life in which a distinctive set of activities can be conducted around a set of interrelated goals," we identified the seven career areas in which all individuals function: work, leisure, family, citizenship, health, ethics, and esthetics. We decided to focus on the career area of work not only because of the continued importance of the education-to-work transition in the United States, but also because this decision was in keeping with the emphasis of the National Institute of Education 1973 Forward Plan.

The second limitation had to do with linkage areas. We outlined four possible linkage areas as education-to-education, education-to-occupation, occupation-to-education, and occupation-to-occupation. With the support of our advisers and the endorsement of NIE, we selected the education-to-occupation area for this current study. This decision meant that a number of interesting and complex issues would be excluded, e.g., the discontinuity between career education programs at different educational levels, the barriers facing adults as they contemplate further educational and career planning assistance. Yet millions of individuals of all ages are involved in the education-to-occupation transition annually, and there was agreement among our advisers that an insufficient number of linkages were in place and that the area was much in need of investigation.

The third limitation resulted from our operational definitions of education and work. We decided to concentrate on secondary and postsecondary education because it is at these levels that students' transitions to work occur. And we decided to concentrate on paid work, not because we have any question about the tremendous importance of unpaid work in the lives of individuals, but rather because we are convinced that paid work will remain an important ingredient in the lives of most adults and that the problems in this area impinge upon the lives of millions of individuals annually.

A fourth limitation was made with respect to the types of linkages that would be studied. Because

it was a purpose of this project to consider systemic change we determined to focus on those mechanisms, processes, and products that are or might be used to bring the segments of the education and occupation systems into a harmonious relationship. This eliminated deliberate review of guidance and information mechanisms, processes, and products established to inform students about the relationship between their present education and their future occupations. This decision meant that we were looking more at linkages designed to affect individuals through institutional change than at ones set up to work with students on an individual basis.

CHAPTER 3: SURVEY
   OF CURRENT LINK-
   AGES

Chapter 3 presents the procedures and findings of a survey conducted in California, Florida, New Jersey, and Ohio to identify existing linkages and to elicit ideas for possible improved linkages. These four states were selected because of their high level of current career education activity and to make geographic representation as wide as possible. The survey participants represented the full range of types and levels of institutions: public, private, and proprietary; secondary, two-year postsecondary, four-year postsecondary, and graduate postsecondary. The individuals occupied a broad range of positions inside and outside government and collectively represented an enormous amount of experience in observing and developing education-to-occupation linkages. In general, we spent six person days in each state, interviewing 104 people altogether.

The findings are organized by states, and brief descriptions are given for about 80 of the more than 100 linkages found. As could be expected, a large portion were either advisory councils or work-experience programs of one sort or another. These two forms of linkage are widespread in each of the four states visited. In fact, in Ohio every high school vocational education program must file a plan for using an advisory council with the State Division of Vocational Education as a condition of receiving state financial aid.

The 80 linkages mentioned range from informal mechanisms, such as attendance by a community college placement officer at monthly dinner meetings of the Association of Personnel Directors of Greater Miami, to formal and well-developed mechanisms, as exemplified by the Ohio Board of Nursing Education and Nurse Registration. The 80 represent local, regional, and state initiatives and have been included in the report

in the hope that they would serve as idea generators
for readers interested in improving their own educa-
tion-to-occupation linkages. Twenty-six linkages,
most of which were uncovered in the survey, are de-
scribed in greater detail in a supplemental report
titled Bridging the Gap: A Selection of Education-
to-Work Linkages.

Following each state presentation are general
observations offered as impressions based on six
person days of interviewing knowledgeable people at
state and local levels. The statements are often
cryptic and no doubt in some cases distort what is
occurring in a given state, but we thought readers
might find such observations useful as they seek to
understand linkage as a concept.

CHAPTER 4: SURVEY
ANALYSIS AND IN-
TERPRETATION

and

CHAPTER 5: ALTERNA-
TIVE LINKAGE AP-
PROACHES

Chapters 4 and 5 analyze the survey findings and
offer an analytic structure for considering linkage
development. In designing the survey we intended to
look for linkages that were addressed to the inter-
face of the education system and the occupation sys-
tem in order to align education exit requirements
with occupation entry requirements. For the most
part, such linkages were not found. Instead, the
findings indicate that schools and colleges actually
use communication devices (e.g., advisory councils)
to keep themselves informed about job entry require-
ments and working conditions and use program linking
devices (e.g., work experience) to arrange school
conditions that resemble working conditions.

In general, educators appear to be placing
greater emphasis on bringing the processes of educa-
tion and work closer together and relatively less
emphasis on efforts to align the exit requirements
of one system with the entry requirements of the
other. This emphasis is understandable in that both
educational professionals and the larger community
traditionally have paid more attention to process
than to outcomes. In fact, if this were not so, it
is unlikely that the accountability thrust aimed at
education in the early 1970s would have produced such
strong, reactions. But it has had its effect, and
educators and lay people alike are beginning to turn
their attention not only to the outcomes of the ed-
ucational process but to the alignment of those out-
comes with occupational entry requirements. In the
proposals that come later in the report, we set
forth ideas for improving linkage between the processes
of education and work and between requirements.

Requirements linkages, though potentially more power-
ful, are also likely to be more difficult to imple-
ment.

How tightly should education and work be linked?
In considering this question we regarded linkage as
a continuum, with the major points on the continuum
being separation, communication, participation, sub-
stitution, and integration. Educational and work in-
stitutions for the most part seem to be at the point
of communication and moving toward participation.
That is, efforts under way in the education world to
link with the work world typically take the form of
soliciting information about the nature and character-
istics of specific occupations. All kinds of devices
are used to accomplish this purpose, such as advisory
councils, informational brochures, site visits,
placement and follow-up studies, etc. At this
level of linkage educational systems retain vir-
tually complete authority over their programs, us-
ing the information they receive as they see fit.
For this reason we regard communication devices as
"weak" links. The information-giving agent has
little authority over the agency receiving the in-
formation. And this is a likely explanation of
why advisory council members, for example, often
regard their activity with a degree of frustration.

Institutions moving toward the participation
level of linkage typically involve outside interests
more directly in program evaluation, curriculum
development, and other functions of the school. In-
stitutions at this level are also characterized by
students' involvement in work settings for some
period of time through such devices as work-study
programs, job simulation, and other short-term work-
experience arrangements.

Our findings lead us to support participation
as the most desirable level of linkage for our society.
We believe that the wide-scale implementation of
participation linkages would maintain a healthy
dynamic tension between the worlds of education and
work and that this tension would produce long-range
benefits to·society and the individual. We believe
that the domination of one sector over the other will
produce a condition ultimately detrimental to both.
For example, if the purpose of education were simply
to train individuals with certain skills and at-
titudes that would enable them to meet a given set
of work entry requirements or fit into a particular
slot, education would become the lackey of the work

world and would be forced either voluntarily or by governmental edict to suppress programs or activities seen as tangential or contrary to job training. If, on the other hand, the work world were to adjust its entry requirements continually to correspond to the characteristics of students emerging from educational institutions, it would either jeopardize its ability to produce goods and services profitably or be forced to initiate ever more massive training programs of its own.

Although the focus of this study is on the educational sector, our advisers expressed concern that change take place not only on the education side but on the work side as well. Businessmen with whom we talked seemed convinced that the educational system should change to be more attuned to the world of work, but they saw little need for major change in the work system. Although we recognize the difficulty of effecting modifications in the work system, we stress our conviction that unless change does take place to humanize the work process, linkages that might be created to improve education will have little effect on improving the quality of life in the United States. They may succeed in smoothing the transition from education to work, but individuals may become increasingly disenchanted with the transition and eventually might reject it if socially acceptable alternatives can be found.

CHAPTER 6: BARRIERS AND PROPOSALS

In Chapter 6 we have attempted to look through the eyes of the practitioner at the barriers he/she sees that hinder the transition process. The barriers have been grouped into four categories: (1) fluctuating requirements, (2) development and use of manpower and job requirements information, (3) credentialing, licensing, and certification procedures and examinations, and (4) control and authority. As part of this discussion we offer 12 proposals, some of which are geared for local implementation, others for state or federal. The 12 should not be regarded as firm recommendations for public policy but as ideas for pilot testing that can be expanded into policy changes contingent upon an evaluation of their operational effects. In fact, certain proposals are presented as alternatives, recognizing that political realities produce differing organizational and functional configurations from one state or local situation to another.

FIRST CATEGORY OF BARRIERS. See page 98.

In the discussion of fluctuating requirements we posit that the process of bringing education and work closer together remains difficult partly because requirements are continually shifting. What does the B.A. or the high school diploma mean? What does it really take to perform well in a particular job? These are only two of the many critical questions confronting our society. Not only do requirements fluctuate, in large part because of economic and social forces, but also they tend to be developed in isolation from one another --that is, education exit requirements are typically developed by educators and work entry requirements by those in business and industry. If the transition of individuals from education to work is to be significantly improved, each sector needs to listen to and learn from the other, and both need to examine their processes and requirements in terms of the other. Perhaps we are biased, but we sense more movement on the education side of the fence in this regard than on the work side. If this is true, it is a situation that warrants attention.

Proposal 1 (page 99)

Proposal 2 (page 101)

We offer five proposals in response to this first barrier. Proposal 1 states that *opportunities for unpaid work experience should be provided for all students in all major programs at both the secondary and postsecondary levels,* and Proposal 2 states that *secondary and postsecondary graduation requirements should reflect the importance of work experience for all students.*

Work experience as a generic term covers a seemingly endless variety of activities that combine education and work. Some activities are more education, offering only token exposure to real work; others are more work, offering little relationship to a student's classroom learning. Critics have labeled the latter "cheap labor." Still other activities have provided students an effective balance and have been of sufficient length and complexity to be rewarding to both the participant and the participating work institution.

It is this third form of work experience we propose. If the experience is not rewarding to the student, an important learning opportunity will have been lost. Yet if it is not rewarding to the corporation, though perhaps not always in economic terms, it is unlikely that the corporation will sustain its commitment.

Thus far in the United States work experience has been used primarily to achieve specialized purposes and has been directed to particular audiences (e.g., dropout-prone students, needy students, gifted students). Only recently have educators and others regarded it as contributing to broad educational objectives and, therefore, as suitable for all students.

But pressing questions haunt the implementation process. Where can all the work stations be located? What incentives can be provided to industry and labor to cooperate? Will work-experience programs take employment away from adult workers, particularly the marginally employed? These and other questions bear scrutiny, and in Chapter 7 we discuss a possible role for the National Institute of Education in such an investigation.

Proposal 3 (page 102)

Proposal 3 concerns the need for more definitive information on the outcomes of the educational process and its relationship to work entry. We propose that *follow-up studies of secondary and post-secondary school graduates and dropouts who did not immediately continue their education should be conducted annually to discern the extent and nature of misalignment between education exit requirements and work entry requirements.*

Much of the follow-up work currently undertaken is conducted only with graduates of certain programs. Also, this work appears to be too imprecise to provide significant program-planning assistance, and possibly because of this, it is often not given serious attention in curriculum and program review. A hard look needs to be taken at existing follow-up survey forms in terms of their potential usefulness, and strategies need to be developed for involving those responsible for the data collection on curriculum review teams.

Proposal 4 (page 102)

Proposal 4 takes cognizance of the important role local initiative has to play in linking education and work. This proposal urges that *Community Education and Work Councils, comprised of educational, business, labor, government, and other community leaders, should be established. Sponsorship may come from the educational sector, the work sector, or the community sector--whichever is willing to assume the initiative.*

We believe that the linking process would be most aided if a council sprang from the local community at large, but we recognize that while this may be possible and desirable in many communities, other patterns may be more suitable in other communities.

However organized, the councils should have authority and responsibility to organize community resources in order to be of maximum benefit to schools and colleges and to design and implement a system for placing students in work sites consistent with their interests and long-range planning. These councils should also provide a forum for the open sharing and resolution of problems and concerns associated with large-scale educational involvement in corporate life and large-scale corporate involvement in educational life.

Proposal 5 (page 104)   The fifth and final proposal issued in response to the fluctuating requirements barrier is that *the state legislature or governor should establish a state-level interagency Career Competency Assessment Board that would report to the highest levels of state educational and labor government.*

Bringing the processes of education and work closer is primarily a local activity, but aligning the exit requirements of education with the entry requirements of work is a continuing task that most likely necessitates state leadership and involvement. The assessment board would bring educational, business, labor, and government leaders together for the primary purpose of gaining commitment from their respective constituencies to participate in the process of articulating a common language that would be used by their institutions in describing secondary and postsecondary education exit requirements and job entry requirements. Agreement may be sought for a reaffirmation of particular course requirements, some sort of competency-based language, a set of common attitude or other personal characteristics, or conceivably some combination of these. The board could perform other functions, such as providing funds to educational institutions interested in developing student exit competency statements or to state licensing boards desirous of developing competency-based examinations.

If such a board is to establish credibility, its structure within the state government, its membership, and its relation to existing councils such as the state advisory council on vocational education are critical.

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SECOND CATEGORY OF
  BARRIERS. See
  page 105.

The second category of barriers has been labeled
"development and use of manpower and job require-
ments information." The collection and dissemina-
tion of data and information about jobs for use by
educators and students is an area of confusion and
mistrust. Although information on job requirements
and job vacancies appears to be available, it is
often not believed or, if believed, not acted upon.
In most cases, the state department of labor or
private organizations of businessmen collect data
regarding job availability and job entry experience
and educational requirements. These data are fre-
quently mistrusted in the academic world because of
differences in definitions of terms, a different
world outlook, or an ignorance of the degree of
sophistication of available data and collection and
dissemination procedures.

Proposal 6 (page 107)

Proposal 6 suggests that *the governor's office should
create a statewide interagency task force to coordinate
and stimulate the production and utilization of man-
power demand and supply data.* This task force should
have statutory authority to collect relevant data,
and at least some members should have comembership
on other statewide planning and policy-making bodies.

The most comprehensive, detailed, and widely used
national publication on job requirements is the
Dictionary of Occupational Titles. Proposals 7 and
8 suggest certain revisions in this useful document
to improve its value as a mechanism for curriculum
development, education exit requirements adjustment,

Proposal 7 (page 108)

and individual guidance. Proposal 7 is: *The U.S.
Department of Labor in its work on the fourth edi-
tion of the Dictionary of Occupational Titles should
reorganize into competency statements the "Worker
Requirements" section of its 114 Worker-Trait group
descriptions and, insofar as possible, the defini-
tions for the 22,000 separate occupations.* And

Proposal 8 (page 108)

Proposal 8 is: *The fourth edition of the Dictionary
of Occupational Titles should include a classifica-
tion system organized around personal competency
areas and a cross-referencing system whereby an
individual with known competencies will be able to
find occupations, possibly quite unrelated to each
other, that require similar competencies.*

The DOT currently is in the process of revision, with a new edition scheduled to appear in 1976. We hope these proposals will be taken into consideration by those responsible for the revision. A particular benefit of the competency cross-referencing system outlined in Proposal 8 would exist for individuals desiring or required to change occupations. Through this system they could be made aware of occupations that are possibly quite unrelated to each other but require similar competencies.

THIRD CATEGORY OF BARRIERS. See page 109.

The third category of barriers is "credentialing, licensing, and certification procedures and examinations." These are the most formal and formidable barriers to the education-to-work transition. Because of the need to develop a means of protecting the public from unqualified craftsmen and professionals, a system has evolved that by its nature tends to be closed and limiting. Certification and licensing requirements typically prescribe procedures and examination, with the intended or inadvertant result being a delimitation of the number and type of individuals competing for certification. Often, a real or artificially created job shortage is produced, and individuals with established roles in the trade or profession soon come to control the licensing and certification process.

Efforts are under way to create flexibility in the system without jeopardizing the desirable consequences of certification and licensing. California, for example, passed a law recently that requires public

Proposal 9 (page 111)

representation on licensing boards. Proposal 9 suggests that a similar approach be taken by all states, and that initiative come from state legislatures. The proposal is that: *State legislatures should take appropriate action to require licensing boards to broaden their membership to include two new groups: those outside the trade or profession who can act as representatives of the public interest, and educational professionals who can represent those with responsibility for training in the respective areas.*

Proposal 10 (page 111)

Proposal 10 offers an alternate or additional approach for improving the licensing function. The proposal states: *Federal encouragement and support should be given to efforts to organize state educational licensing and certification agencies into a more cohesive system in order to improve and regulate more effectively the procedures by which certification and licensure are awarded.*

The need for consolidation stems from the problems of widely varying licensing procedures and requirements, from undesirable access restrictions, and from the cleavage that often exists between training institutions and licensing boards. No doubt numerous ways of tackling these problems can be found, and Proposal 10 is intended to stimulate the discovery of solutions, whether they may in the strengthening of existing "umbrella" agencies, the adoption of the New York model of control by the State Board of Regents, or some other strategy.

Tackling the certification barrier from another position is the competency-based education movement. We endorse this movement, and though there may be some occupational fields that do not lend themselves easily to competency statements, we urge federal support of efforts to develop competency examinations **Proposal 11 (page 113)** in a wide range of fields. Proposal 11 states: *The National Institute of Education should stimulate the development of model competency-based examinations and certification procedures in a number of occupational fields ranging from skilled crafts through the professions.*

We suggest that NIE stimulation could take one of two forms. Either it could award a series of grants to selected occupational associations, such as a state association of craftsmen or the state board of architects. Or it could award a grant or series of grants to a state agency, such as a state educational licensing board or a legislative committee on education and work. This body would coordinate the development of competency examinations and procedures in multiple occupational fields, building on knowledge gained from one experience to facilitate further development.

FOURTH CATEGORY OF BARRIERS. See page 114.

The fourth and final category of barriers is labeled "control and authority." In the worlds of education and work a number of compartmentalized units operate in virtual isolation from one another. Funding sources are insulated from accrediting agencies, which in turn are separated from curriculum development groups, which in turn are isolated from the committees and boards that organize and rationalize jobs and work. A sense of insularity marks each process; individuals appear to operate in tightly knit units and make contact with each other only at the periphery of each of the groups. The separate rules and recognition factors within each of the groups affect students moving from school to work in different ways and with differing expectations.

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Linking mechanisms between education and work should ensure that curriculum decisions, for example, are shared by the faculty with those in touch with the work world. And, at the same time, they should ensure that those in work institutions share with those in touch with education the decision-making authority with regard to organization of the workplace. Neither idea is likely to be received enthusiastically by those being asked to share authority, but until some movement is made in this direction the transition process will remain difficult and frustrating for many.

Proposal 12 (page 116) The proposal we offer to reduce this barrier provides five alternative political structures in recognition of the different political climates and organizational structures in each state. This last proposal recommends that *states should consider some organizational mechanism for bringing together under one roof the myriad planning and funding arrangements aimed at human development. Possible alternatives include a governor's state council on education and work, a legislative committee on education and work, a joint executive-legislative lay council on education and work, state and regional human development planning councils, and a state department of human development.*

CHAPTER 7: RECOMMENDATIONS FOR FURTHER RESEARCH AND DEVELOPMENT FOR THE NATIONAL INSTITUTE OF EDUCATION Chapter 7, the final chapter, is directed specifically to the National Institute of Education in response to the original Request for Proposals which called for the contractor to "develop a strategy(s) for NIE to consider what further research and development will allow for maximum benefit to the field...." In this chapter we recommend two research and three development activities. These recommendations grow out of selected proposals in the previous chapter and are regarded as essential first steps.

The research activities focus on evaluation of the effectiveness of alternate forms of work experience at the secondary and postsecondary levels and on evaluation of the effectiveness of alternate forms of community education and work councils. The developmental activities focus on NIE stimulation of the development of competency-based examinations in occupational fields ranging from skilled crafts through the professions and on NIE support for development of issues papers and subsequent model legislation pertaining to expanded membership for licensing boards. The final activity recommended is that NIE support a series of working conferences with policy makers to consider ways to improve the transition from

education to work through implementation of the proposals in this report or of others that appear to be more appropriate.

The report concludes with a final caution. Will creating better linkages between education and work be an unmixed blessing? It seems possible that the effect of such linkages will be to create support for those aspects of the school or college program that have utility in the workplace while at the same time leading to neglect (or possibly opposition) of those aspects that have low or no utility in the workplace. If education-to-work linkages are strengthened, there is an irreducible amount of risk to those areas of the educational program that prepare a person for careers other than work. But if such linkages are not promoted, various degrees of obsolescence may continue and perhaps even grow in the education system, and problems of worker alienation may continue and perhaps even grow in the work system. In any event, the gap between the two systems is not likely to be narrowed without conscious intervention, and the difficulty and frustration faced by so many who make this transition one or more times will continue.

Clearly, the dangers of an education-work system that is too tightly and narrowly linked are real, and those responsible for overall improvement in both worlds--education and work--must weigh the issues carefully.